

8/23

Welcome!

Ms. Walczak

#4.3c

DO NOW:

- **Turn in** any late homework to the bin on Ms. Walczak's desk.
- **Grab YOUR calculator** from the wall by the door.
- Take out your **Warm Up Sheet**.

Homework: [Late work](#)

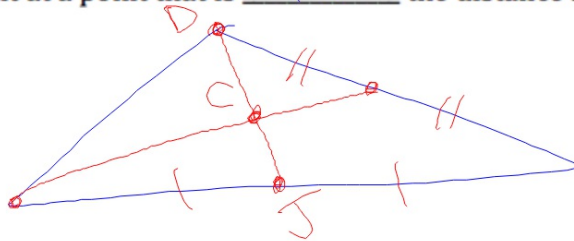
Essential Question: How do you solve problems that involve measurements of triangles?

Median: A segment whose endpoints are on a vertex and the midpoint of the opposite side.

Theorem: The medians of a triangle are concurrent at a point that is $\frac{2}{3}$ the distance from each vertex to the midpoint of the opposite side.

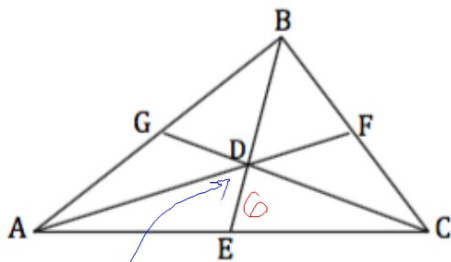
$$DC = \frac{2}{3} DJ$$

$$CJ = \frac{1}{3} DJ$$



Example 3:

D is the point of concurrency of the medians of $\triangle ABC$ and $DE = 6$. G, F, and E are midpoints. Find BE.



$$DE = \frac{1}{3} BE$$

$$3 \cdot 6 = \frac{1}{3} BE$$

$$18 = BE$$

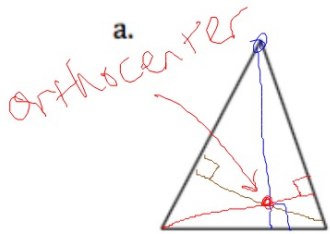
Centroid: point of concurrency of median

Altitude: \perp segment from vertex of Δ to the line containing opposite side.

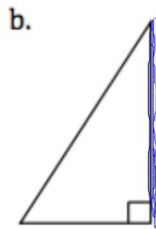
Example 4:

Draw the altitude of each triangle from the vertex closest to the top of the paper.

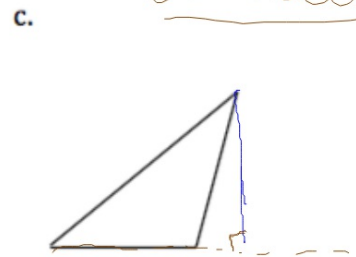
∇ Meet at orthocenter



Acute Δ



Right Δ



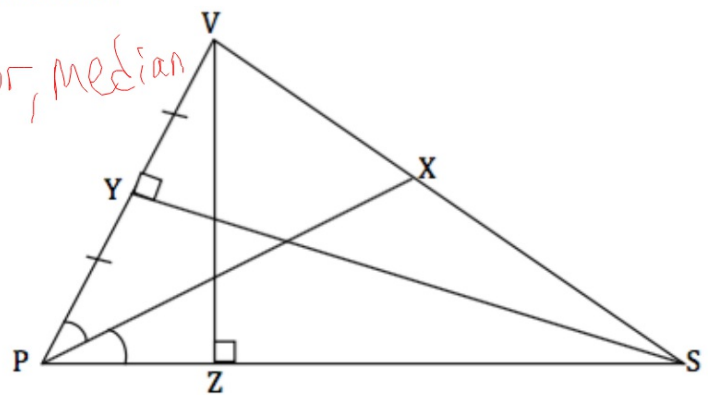
Obtuse Δ

Example 5:

State which of the following (you may use more than one) can be used to describe each segment:

angle bisector, median, altitude, perpendicular bisector

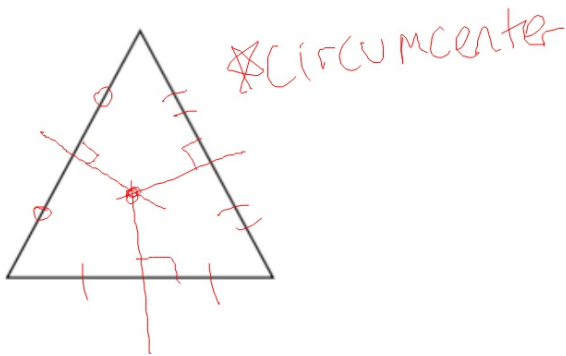
- a) \overline{YS} altitude, \perp bisector, median
- b) \overline{PX} angle bisector
- c) \overline{VZ} altitude



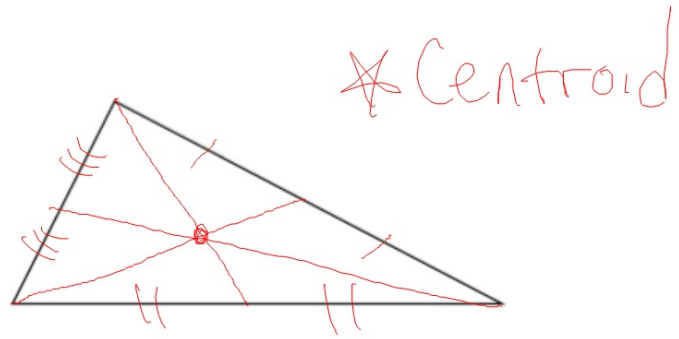
Example 6:

Draw in 3 lines such that they all fit the given description. Label your triangle precisely.

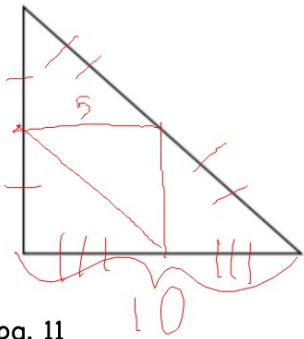
a. perpendicular bisector



b. median



c. midsegment



d. altitude

